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VOICE OF THE ELECTRIC UTILITY INDUSTRY

LATE NEWS

New Orleans-based Entergy, with four electric utilities, offered $2.3 billion for Gulf States Power Co. Gulf States, based in Beaumont, TX, has been facing financial and legal challenges related to the River Bend nuclear plant.

Yankee Rowe operators cite higher decommissioning costs, in-part from lack of high-level nuclear waste storage, as reason for seeking a 828-million annual rate hike until 2000. Other utilities may need to refigure how much to set aside for decommissioning.

Energy bill nears enactment

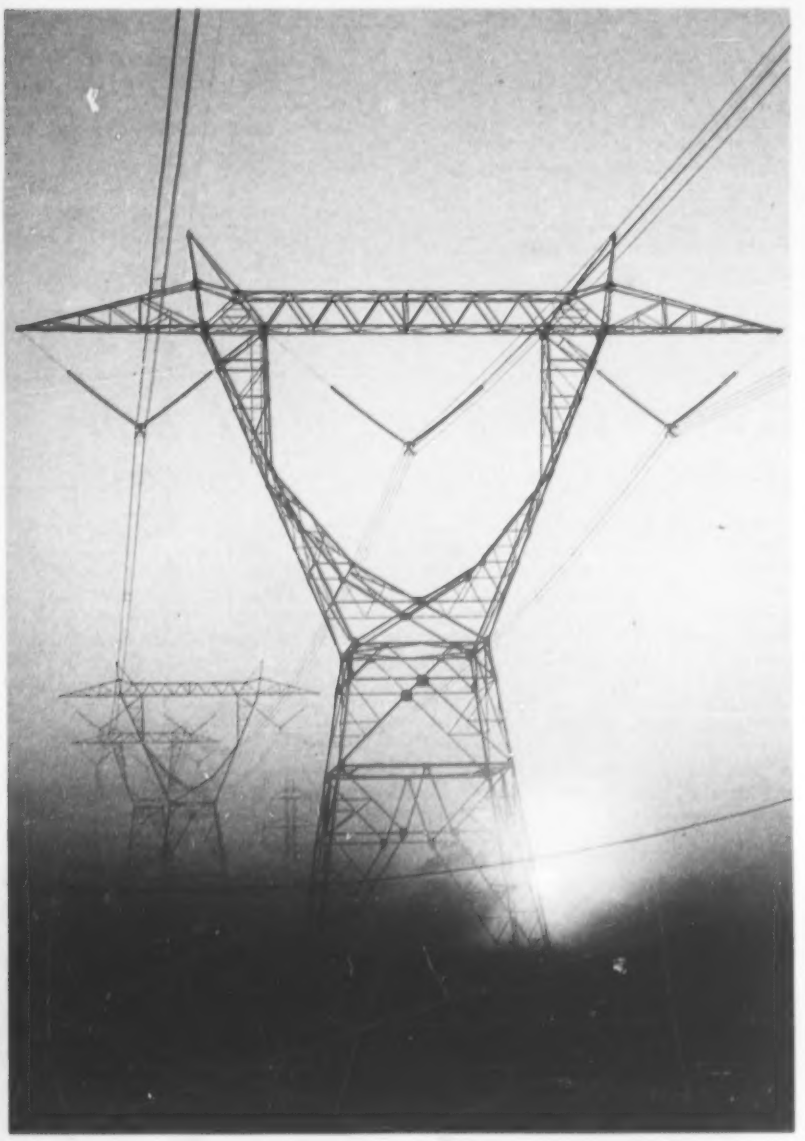
WASHINGTON—By the Fourth of July, Congress could send a national energy bill to the president's desk, including reform of utility holding company law and nuclear licensing.

Major issues in the conference committee are likely to include transmission-access provisions.

Bills passed

The House passed its energy bill, HR 776, on May 27. The Senate passed its version in February. Both exclude auto efficiency standards and added Arctic oil exploration, which were too controversial to allow the package to pass.

Among the most wide-sweeping changes for utilities are reform to the Public Utility Holding Company Act of 1935 (PUHCA), the nuclear licensing procedures, and limits to Nevada's power to slow site characterization for a high-level nuclear waste repository at Yucca Mountain.



Legislation seems likely to bring a new dawn of competitiveness among electric utilities. Access to transmission lines has been a major point of contention. (Photo courtesy of American Electric Power.)

The language on nuclear licensing adopted in the House bill was the same as in the Senate legislation, S.2166, passed Feb. 19 (*EL&P*, 3/92, 4/92, p.1). The House bill includes tax provisions to promote demand-side management, and electric vehicles, and renewable energy. Both advance efficiency.

Nuclear license, transmission access

Because the House essentially accepted the Senate language on nuclear power, the conference committee may have to be more flexible about House transmission-access provisions. Access, without retail wheeling, was in the House legislation, but not in Senate language.

Historically, utilities without ownership interest in transmission lines argue that owners discourage others from using those facilities. Some investor-owned utilities have tried to offer more open-access arrangements, with mixed results. Large customers, independent power producers, and municipal utilities generally support open access.

Although President Bush has said he would veto unfavorable legislation, a compromise bill the administration can sign seems likely.

Administration is pleased

Linda Stuntz, deputy secretary of the U.S. Department of Energy, told the recent annual meeting of the Edison Electric Institute that DOE is happy with Congress' progress on federal energy legislation.

"We have a good bill from the Senate and a workable bill from the House." She said DOE was particularly pleased with the nuclear licensing provisions of the House bill: "It's terrific." House agreement with the Senate takes this issue "essentially off the table."

Stuntz said it's possible that the bill could be completed in a conference committee and sent to the president for signature prior to the July 4 recess.

Targets for change

DOE's priorities for the conference committee include eliminating the provisions in the House bill restricting oil drilling on the Outer Continental Shelf, cutting back "burdensome" provisions in the House bill on hydropower licensing, and making sure that PUHCA reform doesn't include mandatory transmission access.

DOE favors only voluntary transmission access agreements with no federal mandates, and opposes retail wheeling. DOE, Stuntz said, is "enthusiastic" about voluntary regional transmission access agreements. The problem, she added, is how to translate that into concrete legislative proposals.

Stuntz said a key issue in the conference access debate will be FERC's power to order construction of new transmission lines in order to facilitate more

Continued on page 3

EPA issues final WEPCo rule

WASHINGTON—The Environmental Protection Agency issued a final rule in mid-June on environmental regulation of power plant modifications—the so-called "WEPCo rule." The rule resolves a four-year dispute between EPA and utilities and may spur delayed projects.

EPA says the rule "would exclude pollution-control projects at electric utility power plants from 'new source review' unless EPA determines that the projects would not be environmentally beneficial. In addition, other physical and operation changes, apart from pollution-control projects, will also be excluded from 'new source review' unless they cause an increase in actual emissions."

Uncertainties started in 1988

The dispute surfaced in 1988 when EPA required Wisconsin Electric Power Co. to subject its 40-year old Port Washington station to a 'new source' environmental review because a proposed life extension increased the station's potential to emit pollutants. Retrofit pollution control equipment required by EPA as a result of the review doubled the cost of the project.

WEPCo and EPA reached agreemer and the utility proceeded with the Port Washington project, but the precedent-setting ruling killed the fossil power plant life extension trend, primarily be cause there were no published guidelines for evaluating existing plant modification projects.

Asked about the new rule, WEPCo CEO Richard Abdoo said, "We can live with it." He said the new rule would have resulted in the same amount of environmental retrofit costs at the Port Washington project as the original EPA ruling, but publication of the rule allows utilities to accurately estimate the added costs in advance.

Abdoo said the modifications to the first unit at Port Washington are complete and the rest of the project is proceeding on schedule.

DOE calls rule good, reasonable

Linda Stuntz, deputy secretary of the Department of Energy, which opposed EPA on the WEPCo rule issue, said, "I'm glad it finally got done. It's too bad it took so long." She said she feels the final rule is a good rule and allows for reasonable maintenance of older plants.

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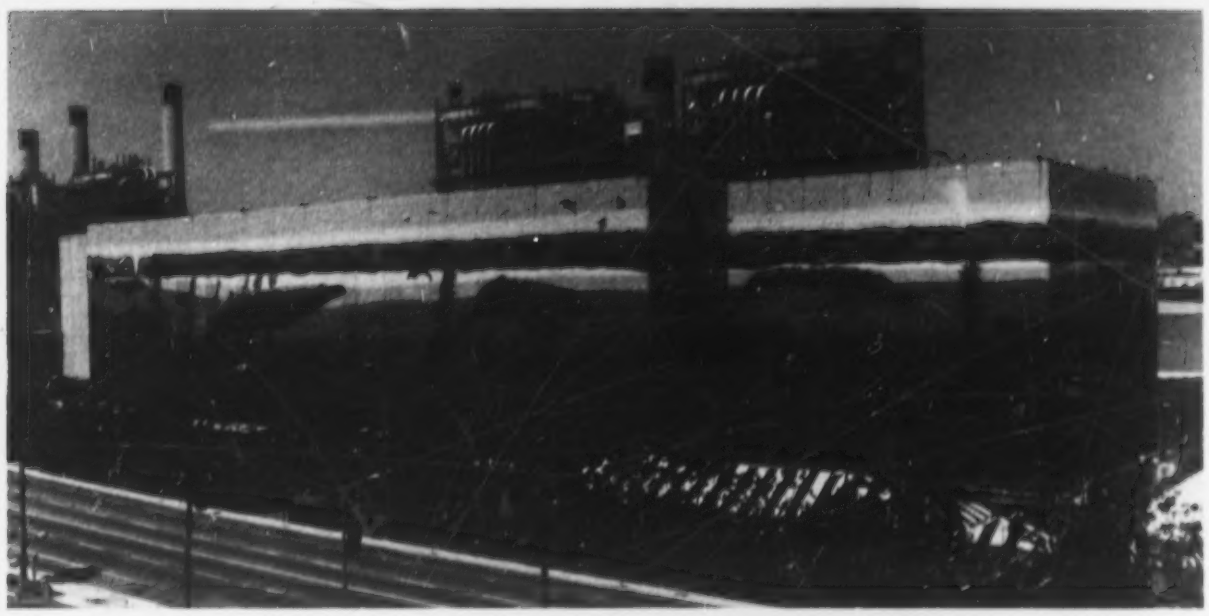

Lifesized wall of whales brings record SCE publicity

A year after Southern California Edison's Whaling Wall XXXI was dedicated as the largest lighted mural in the world, the company reports over 1450 positive "media hits" and improved business and community relations. The 10-story by 622-ft mural covers part of the wall around SCE's 88-year-old Redondo Beach plant, now located in a residential/light commercial area. "It's an overpowering scene that's really become a point of interest and pride for the community," said SCE spokesperson Robert Goodlow. The wall brought record publicity to the company, he added. The mural, by environmental artist Wyland, shows 12 life-sized gray and blue whales and other marine life. More than 10,000 people were involved, including the Redondo Beach Chamber of Commerce. SCE did three media kits and two video releases related to the wall and accompanying events. SCE also helps operate a marine education facility adjacent to the site. Since 1977, SCE has spent over $3.5 million for noise reduction at the 1500-MW, natural gas-fired plant.

Northeast Utilities completes PSNH purchase

MANCHESTER, NH—After more than four years of uncertainty for Public Service Co. of New Hampshire, Northeast Utilities completed its $2.3-billion acquisition.

PSNH, burdened by construction and litigation delays at the Seabrook nuclear plant, filed for Chapter 11 Bankruptcy Protection in January 1988, after about six years of financial difficulties. NU's newly formed North Atlantic Energy Corp. subsidiary now owns PSNH's 35.6-percent share of Seabrook.

NU is the plant's new majority owner. It started full-power operation in August 1990.

PSNH emerged from bankruptcy protection in May 1991 under agreement that it would be acquired by NU.

Best offer

NU gave PSNH the best offer, which will save nearly $1 billion for customers of both systems, NU said. New England Electric Systems also bid for PSNH.

Merger approvals and debate ignited transmission access and wheeling controversy throughout the industry.

The Federal Energy Regulatory Commission chose to refine its case-by-case transmission policy with its approval of the transaction. FERC made and revised its conditional approval by offering others more access to the now larger NU grid. Provisions exist not to deprive NU customers of savings from economy exchanges if others are fully using the system.

Identity maintained

Despite some merger consolidation and change in management staff, NU has tried to maintain PSNH's identity. An NU announcement used the word "affiliation," rather than acquisition, even though PSNH will operate as a wholly-owned subsidiary.

NU will also maintain a separate PSNH president and board of directors based in Manchester, NH. PSNH also will be operated more autonomously than three other NU electric utility subsidiaries, said William B. Ellis, NU chairman and chief executive officer. The NU board added two New Hampshire residents.

Other operators

Other NU operating utilities are Connecticut Light & Power Co., Holyoke Water Power Co., and Western Massachusetts Electric Co.

Interest glows for new, efficient bulb

COLUMBUS, OH—A versatile, high-efficiency bulb will help demand-side management efforts starting early 1993, according to a manufacturer and American Electric Power.

The "E-Lamp," by Intersource Technologies, uses radio waves instead of a filament or electric current. Intersource has $6.5 million in support from AEP, which bought part of the company.

The bulb, introduced at the Edison Electric Institute annual meeting, received wide media coverage, including extensive play in *The New York Times*, *Wall Street Journal*, other major papers, and newswires.

AEP's Catherine Ferrari said interest has remained high since the June 1 announcement.

Widespread interest

"We've been flooded with calls—everyone imaginable—utilities, prospective manufacturers, distributors, and investors," Ferrari said.

The price for an E-bulb is said to be about $15. Ferrari said she expects the first widespread offerings to commercial and some residential customers, "similar to what utilities do with compact fluorescents."

The "induction" bulb uses a magnetic coil to generate a high-frequency radio signal that excites a gas causing a phosphor coating to glow, like a fluorescent bulb. Makers say the E-bulb provides the same light, but is four times as efficient as incandescent bulbs (about as efficient as compact fluorescent bulbs).

Like incandescents, the E-bulb has dimming capability, a smaller size, a wider variety of color, and lights instantly. The life of an E-bulb, said to be 20,000 hours, is not reduced by on-off switching. Incandescents last about 1,500 hours.

Intersource, working with Diablo Research Corp. of Sunnyvale, CA, says it has solved interference problems caused by previous radio-wave bulbs.

Cooling towers for revised clean water compliance would be costly

WASHINGTON—A report published in May estimates that if all 679 power plants with water discharge exemptions in the Clean Water Act were forced to install cooling towers, the retrofits would result in a loss of 9000 MW of capacity. The closed-cycle towers would be needed to reduce the plants' cooling-water discharge temperatures.

Environmental groups—mainly the Natural Resources Defense Council—oppose the exemptions that allow the plants to discharge warmed water into adjacent waterways. The Section 316(e) exemptions in the act allow for the discharges as long as they do not significantly affect the waterways' ecologies.

Produced by Stone & Webster Engineering Corp. for the Edison Electric Institute, the report says the changes would increase the plants' total water consumption by 1.5-million gpm.

In addition, emissions of CO_2, SO_2, and NOx would increase because of the additional fossil-fueled generating plants that would have to be built to make up for the lost 9000 MW. The loss would come because of the lower performance of generating plants with retrofitted closed-cycle cooling systems.

Construction, operation, and maintenance of the new plants would cost approximately $13 billion (in 1992 dollars). This was factored in as part of the estimated overall present-value cost of $41.3 billion the report says would be required for the cooling towers and new plants over 20 years.

The conclusions reached in the report were based on all the affected units retrofitting with closed-cycle cooling systems by year 2000. Hyperbolic or mechanical-draft wet cooling tower systems were identified as the most likely to be selected because they would maintain the most capacity in-service and were the least costly, available closed-cycle cooling systems.

Stone & Webster based its conclusions on case studies of the cost of retrofitting an existing 300-MW fossil-fired and an 1100-MW nuclear plant with closed-cycle cooling using cooling towers. This approach reflects the company's judgment that such retrofits represent a likely engineering solution that would be used by many of the plants if Section 16(e) were repealed.

Current total capacity of the affected plants is 189,000 MW, which is 32 percent of total U.S. steam-electric generating capacity.

The overall objective of the study was to gain a sense of the consequences of the repeal of Section 16(e), which is now before the U.S. Senate. The study did not consider detailed, site-specific factors that might influence potentially affected electric utilities' choices for compliance, nor did it consider other economic, social, and environmental impacts of the options chosen.

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Summer economic transfers load transmission grid

PRINCETON, NJ—Transmission systems are being used more for cost-effective transfers of power when possible, according to the North American Electric Reliability Council.

The "NERC 1992 Summer Assessment" said, "Portions of the transmission systems will continue to be loaded near their limits to accommodate economy transfers of electricity."

The most recent Energy Information Administration statistics indicate a general increase in grid use. Net wheeling increased from 1986 to 1990 by 138.6 percent. In 1986, net wheeling in the U.S. was 2,547 million kWh; in 1987, 2,019; in 1988, 2,262; in 1989, 3,525; and in 1990, 6,077.

NERC has given strong warnings that mandates on grid use could adversely affect transmission system reliability (*EL&P*, 5/92, p.1).

Regional concerns

Regional concerns, said the NERC summer report, are worst in the Ontario portion of Northeast Power Coordinating Council (NPCC), and in the Florida portion of Southeastern Electric Reliability Council (SERC). The Ontario subregion margin dips to 8.0 percent in June and 8.8 percent in July. The Florida subregion will go as low as 10.6 percent in September. The average margin for all regions, June-September, is 21.7 percent.

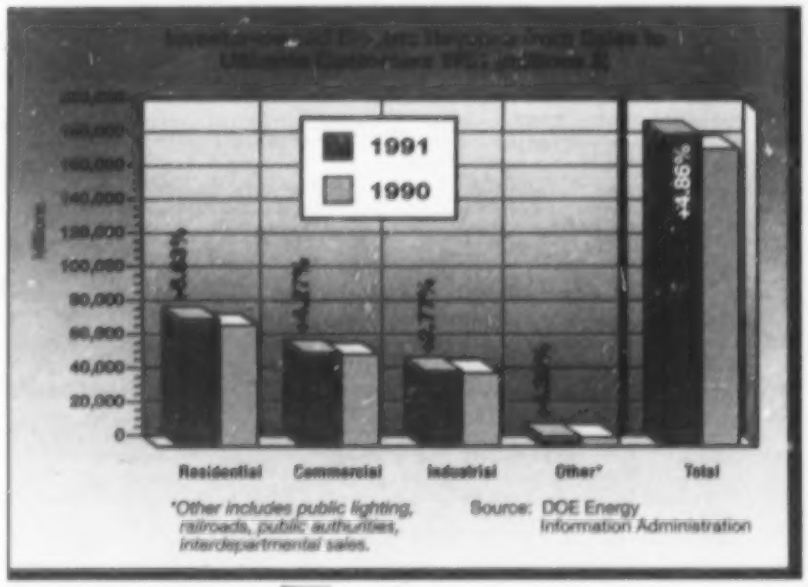
The report from Ontario says the reserve will be adequate, given a 6.5-percent fall in summer peak and continued economic slowdown. Concerns in Florida, however, are continuing ones.

"Capacity margins will be a little less than last year, particularly in the Florida and TVA subregions," the report said.

To alleviate possible tight margins caused by any "greater-than-normal forced outages," or "extremely high temperatures," utilities are exploring options that might improve margins.

These options include "testing of peaking units, maintaining or increasing transfer capabilities, deferring maintenance where possible, improving performance of cogenerators units, reviewing availability of assistance from other regions and reviewing emergency coordination plans and demand-side management programs," said the NERC summer report.

In June through September, regional margins vary from a low of 14.5 for SERC in August to a high of 37.7 for Mid-Continent Area Power Pool-Canada in July. Southwest Power Pool has a high of 30.6 in September.



'Appropriate' EV rates by '93: EEI

COLUMBUS, OH—The Edison Electric Institute called on members at the association's annual meeting here to have "appropriate rates" for electric transportation in place by June 1993.

"This resolution," said Michael Peevey, president of Southern California Edison and chairman of EEI's electric vehicle committee, "commits utilities to take concrete action to provide not only moral support for the concept of alternative vehicles, but to support organizations fighting for market penetration and to have in place throughout the industry appropriate charging rates by June of 1993."

Peevey said that appropriate EV rates should be lower than average rates, they should provide incentives for EVs, and they should be off-peak.

Herculean effort

He also said that a "herculean" effort is needed by utilities to have the necessary infrastructure in place to support EVs. He suggested that there should be battery-charge parking places at shopping malls, office buildings, etc.

Peevey said his company has started a partnership with LADWP, General Motors, and other parties to develop infrastructure needed in Southern California where EVs will be introduced in significant numbers in 1998.

Peevey said SCE plans to structure EV rates to encourage off-peak charging, 10 p.m.-6 a.m. He said he feels utilities could accommodate one-million electric vehicles with no need for new power plant construction by merely improving load factors.

from page 1

Energy bill...

open access.

She said the U.S. must avoid a situation where the Federal Energy Regulatory Commission has the power to order transmission construction without provisions for cost recovery from state regulators. The House bill mandates on transmission access, said Stuntz, are too rigid, giving FERC too much power to order access.

Holding company status

The new energy legislation would exempt independent power producers from Securities and Exchange Commission regulation and aims to promote additional competition among electricity generators.

Under present law, the SEC regulates financial matters of utilities operating in more than one state. Exemptions have been granted, within certain operating guidelines. Exempt companies must limit utility business to primarily a single state.

Ten registered holding companies account for about 25 percent of U.S. generation. About 54 percent of U.S. electricity was generated by 81 exempt electric and 29 exempt combination holding companies in 1991, according to a recent General Accounting Office report on utility holding companies.

PEPCo places obstacles in Olympians' way

Mark T. Hoske, News Editor

WASHINGTON—Potomac Electric Power Co. used its power to place obstacles in the U.S. Olympic Team's way and has been thanked for doing so.

By putting 17-ton concrete bolders in Dickerson Generation Station's discharge canal, PEPCo converted it into a training site for the U.S. Olympic Whitewater Slalom Team. The sluiceway's warm water and shelter provide world-class paddlers year-round training in comfort—as comfortable as one can be in raging water.

Course replicates Olympic run

Part of the run was made to replicate the course constructed for the 1992 Olympics in Barcelona, Spain. The summer games run from July 25 to Aug. 9. The time trials for Olympic Team qualification were held at Dickerson the weekend of May 16.

Olympic whitewater slalom hopefuls train this spring at Potomac Electric Power Co.'s Dickerson plant. PEPCo's efforts improved U.S. chances for a medal in Barcelona. Photo: Rick Giammaria, PEPCo.

"Several PEPCo customers are among the hopeful medal winners," said PEPCo spokesperson Steve Arabia.

For its work, PEPCo has received accolades from the sports world, the surrounding community, and customers throughout its Washington, DC-area service territory, according to Arabia.

"Our course is now well known among the athletes of the world," he added.

The concrete obstacles at the PEPCo training site are 2-17 tons and are unattached to the canal, held in place by their weight. Paddlers must go down the course through 25 gates, struggling against the current to get through some gates.

Dickerson's discharge is 900 feet long, 60-feet wide at top and about 30-feet wide at bottom, but the 75 obstacles reduce passage in places to 2-5 feet. Over the canal's length, 300,000 gallons per minute fall 16 feet. Arabia said the 1992 Olympic course is approximately 300 feet longer.

The project was conceived and completed in 90 days. The course, completed November 1991, was dedicated on Dec. 19. PEPCo donated $27,500 to the effort. The project cost about $75,000, but could have cost several hundred thousand dollars if built from scratch, Arabia said.

Volunteered time and effort

PEPCo employees and contractors adding two 138-MW combustion-turbines at Dickerson volunteered time, equipment and effort to the whitewater project. Dickerson, about 40 miles northwest of the White House, is on the Potomac River. It has three, 185-MW coal-fired units.

The course, not for public use, is administered through the Bethesda (MD) Center of Excellence, part of the U.S. Crew and Kayak Team.

COMMENTARY

Modest near-term T&D spending

Spending by electric utilities for power delivery products and services for the next few years is likely to be very moderate and will generally reflect the nominal 2-percent growth rate in energy sales projected by most industry analysts. The operative technologies for the near term will be upgrading existing power delivery facilities and an increased emphasis on energy conservation.

EL&P's survey of 100 electric utilities indicates that spending for transmission will increase about 4.9 percent over the next five years—slightly outpacing inflation. Transmission spending will be stable for the long run. It may edge up a little in the next two years but not to the high level of 1989.

The responders to our survey show that existing transmission lines in the voltage range 69 kV to 161 kV is by far the largest grouping—146,900 miles compared with 81,390 miles for the EHV group (230-765 kV). Planned additions for the next five years include 6200 miles of 69-161 kV and about 2000 in each of the EHV classes.

There are a few major transmission projects under construction or planned such as the Appalachian Power Co. 765-kV line from Oceana, WV, to Roanoke, VA, the 340-mile, 500-kV California-Oregon Transmission Project, and the 268-mile, 500-kV GPU-DOE line in Pennsylvania, but not too many other large projects.

Our survey indicates a 4.9-percent increase in the number of miles of line rated 230-kV through 765-kV lines in the next five years. A comparison of figures published by the North American Electric Reliability Council (NERC) shows an increase in this voltage class of 8.8 percent over the next 10 years. NERC figures show a base of 147,000 miles of EHV lines at the end of 1990.

Utilities are hoping there won't be a need to buy equipment and services as a result of major storms as happened in the 1991 storm that ravaged northern Indiana and destroyed 95 steel towers within a 25-mile stretch on one 765-kV line, 90 double circuit structures on a 345-kV line, and 165 structures on a 230-kV line.

Spending for distribution facilities is tied very closely with new housing starts although it lags that industry about six months. Housing starts may pick up in the fall by as much as 10 to 15 percent and then stabilize. Some new housing starts may indicate a shift in population rather than totally new loads.

Energy conservation is being stressed at most utilities with demand-side management programs at the customer level and energy efficiency programs for the supply side including low-loss transformers, reconductoring and upgrading low-voltage lines to reduce losses. This will open up the market for those services and products associated with these technologies.

EL&P's survey and input from industry analysts indicate that load growth will stay in the range of 1.5-2.0 percent for the short-term future. This projected modest increase in load growth and the financial constraints will also increase the pressure from proponents of transmission line access. The rights to any available spare capacity in transmission facilities will be hotly contested.

Wayne Beaty, Senior Editor—Power Delivery

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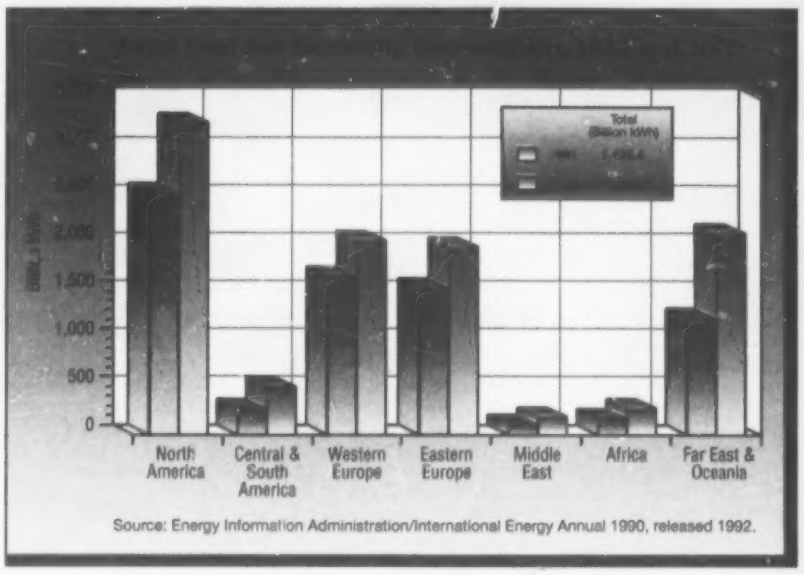
World total electricity consumption rose 2.8 trillion kWh from 1981-90



World total net electricity consumption rose from 7.4 trillion kWh in 1981 to 10.2 trillion kWh in 1990, according to the Energy Information Administration's 1990 International Energy Annual. Electricity consumption in the Middle East doubled, while the Far East and Oceania increased by 74 percent. Central and South America experienced a 73-percent gain, and Africa's consumption rose 59 percent. North America increased about 29 percent, Eastern Europe and the U.S.S.R. 27 percent, and Western Europe 23 percent from 1981-90.

NEWS BRIEFS

JILL MINNER, Assistant Editor

Illinois Power wins EEI's Edison Award

Edison Electric Institute chairman James Farrington announced that Illinois Power Co. received EEI's 1991 Edison Award. It was based on the utility's programs to improve relationships with customers and to improve service through employee teamwork and empowerment programs. Larry Haab, chairman of Illinois Power said that the utility's "shift in corporate culture" in 1991 after losing $440 million in the previous two years and suspending dividends "is nothing short of dramatic." The utility launched a Target Teamwork Program in which employees were encouraged to form four- or five-person teams to improve customer service and efficiency. More than 80 percent of utility employees participated and submitted more than 5000 suggestions that yielded 818 million in savings in 1991 alone, said Haab. A new, centralized, 24-hour service center was opened in 1991 that handled 25 percent more customer requests than were handled with the former system. "It's a great honor—I can't say how great," said Haab. The award recognizes the EEI member that contributed the most to industry growth and development in 1991.

Westinghouse, Rolls-Royce sign agreement

Westinghouse and the English firm Rolls-Royce have agreed to transfer technology and cooperate in marketing gas turbines. Westinghouse, explained John Yasinsky, president of the firm's power systems operation, will package simple-cycle and combined-cycle power generation systems built around Rolls-Royce's aero-derivative gas turbine engines. Now Westinghouse has both the industrial and aero-derivative gas turbine product types, similar to General Electric's product line. Yasinsky said the first new product will be a 25-MW simple cycle machine built around the Rolls-Royce RB211 engine. A new, 50-MW, 42-percent efficient simple-cycle unit based on the Rolls-Royce Trent engine will be available for bids later this year for delivery in 1995, said the executive.

Utility execs say industry unprepared: survey

Only 45 percent of senior utility executives surveyed feel that their company is "well prepared or extremely well prepared" to respond to key strategic issues they expect to face in the next five years. In addition, 15 percent say their firm is "not very prepared," according to a survey conducted by Towers Perrin, a management consulting firm. Of the 240 senior utility executives polled, 43 percent were from electric utilities, 23 percent from gas utilities, 27 percent from combination utilities, and the rest from trade associations, power pools and other related entities. Competition and regulation were cited as two of the most important future issues. Only 28 percent of the respondents ranked environmental issues among the most important, and there was little emphasis placed on the importance of public relations. "Despite increased public involvement in utility issues—and increasingly poor ratings from the public—few respondents included [public relations] in their top issues," explained David Grender-Jones, vice president and director of Towers Perrin Utilities General Management Consulting Group. Future issues most frequently cited were: increased emphasis on customer service (48 percent) and more cost reduction efforts (46 percent).

Cooperation among disciplines prevents burner damage

COLUMBUS, OH—Engineers, the plant manager, and operations and maintenance superintendents teamed up to prevent burner damage in their coal plant by detecting early signs of burner pluggage.

Key is differential pressure

At Ohio Power Co.'s Muskingum River Plant in Beverly, OH, they developed a system that uses the difference in static pressure between two burners to detect coal pluggage. By automatically monitoring differential static pressure, the system indicates plugging before a hot-burner condition can develop.

The detection system includes an electronic differential pressure cell, a recorder with a scale that reads a range of −10 to +10 in. of water pressure, and an alarm with setpoints at +4 and −4 in. of water. The warning system can record a developing change in differential pressure within a minute.

In the plant, the developers found that a pressure differential between two burners could be zero inches of water for several hours and then change to 4 in. suddenly. Within 5 minutes of the increase, the higher-pressure-reading burner temperature began to rise.

Purging

Purging the plugged burner's line with air immediately after detecting the pressure rise can clean the burner and usually prevented the temperature buildup. Then coal run through the purged unit indicates a zero pressure differential when it has been cleaned.

Estimated cost at the plant of a complete burner pluggage system was $20,200. This included $15,000 for components and $5,200 for 260 workhours for design and installation.

The components included one alarm monitor, eight transmitters, nine alarm boards, a power supply, a flowrater, and miscellaneous items such as valves, tubing and conduit. The package records eight burner line differentials with 16 alarm points.

Savings

Maintenance records tell the story. Since introduction of the system, maintenance per year caused by plugged burners has been reduced by 768 workhours, for an annual saving of $15,360.

The method is now being installed at Ohio Power's Kyger Creek and Clifty Creek Stations.

New lead battery will charge faster

AUSTIN, TX—A new lead-acid battery can recharge halfway in eight minutes, compared to an eight-hour full charge for typical lead-acid batteries, said maker Electrosource Inc. on May 27.

A 99-percent recharge takes a half hour, the company said. Utility uses might include electric vehicles (EVs), peak shaving, cordless tools, and for remote switching. An Electrosource official said one of the first applications may be for Chrysler's EV program.

Commercialization is two to three years away, the company said.

One source of support for the effort is the Electric Power Research Institute.

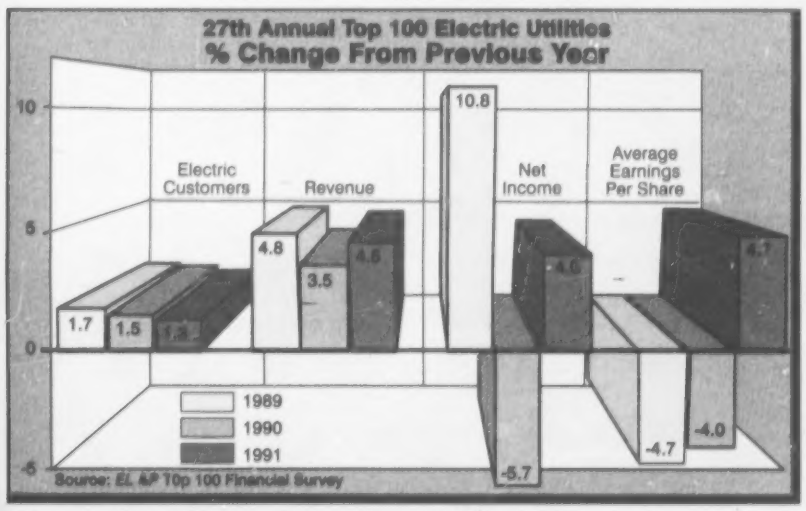
"This advanced lead-acid technology holds great potential for meeting electric vehicle battery requirements in the near term," said EPRI's Jack Guy in a statement.

Corrections

SAN FRANCISCO—In the story seeking papers for the DA/DSM Symposium (*EL&P*, 5/92, p.3), the telephone number was incorrectly listed.

The correct number is 415/647-9003 for DA/DSM '93, Third International Symposium on Distribution Automation and Demand-Side Management. The meeting is Jan. 11-13, 1993, in Palm Springs, CA, and is sponsored by The Eureka Group.

The graphic, *EL&P*, June '92, page 2, excluded petroleum from the mix of electricity generation. The percentage of 1991 U.S. electricity generation by fuel was 54.9 coal, 21.7 nuclear, 9.8 percent gas, 3.9 oil, and 0.4 geothermal, wood, wind, waste, and solar, according to the Energy Information Administration.



This graphic, *EL&P*, 6/92, p.1, reversed the colors for 1989 and 1991. The correct version is shown.

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ELECTRIC LIGHT & POWER

EL&P

AUGUST 1992
Volume 70, Number 8
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VOICE OF THE ELECTRIC UTILITY INDUSTRY

LATE NEWS

A June 29 earthquake, centered 14 miles from the proposed Yucca Mountain high-level nuclear waste storage site, registered 5.6 on the Richter scale. It caused nearly $1 million in damage to a nearby, Department of Energy cinder-block building. The quake raises questions of site suitability, and might lead to further delays and higher program costs.

The '92 Democratic Platform says the U.S. should join European allies in agreeing to limit CO_2 emissions to '90 levels by 2000.

EPA proposes SO_2 allowances

Mark T. Hoske, News Editor

WASHINGTON—Environmental Protection Agency proposed sulfur-dioxide emission allowances for more than 900 generating plants in mid-June.

The regulations gave electric utilities their first look at allowances for the Phase 2, year-2000 allocations in the emerging regulations for Clean Air Act Amendments of 1990. Phase 1 allocations start in 1995 and were written into the law.

Southern Company, with five operating utilities, has the most Phase 2 allowances under the proposal, 722,700 per year. American Electric Power is second with 558,700, and Tennessee Valley Authority, a federal utility, is third with 429,100 (see figure).

TOP 10 RECIPIENTS OF SO_2 ALLOWANCES UNDER PROPOSED EPA EMISSION REDUCTION RULE

	Phase 1	Phase 2	Total
Southern Company	756,800	722,700	1,479,500
American Electric Power	476,900	558,700	1,035,600
Tennessee Valley Authority	552,600	429,100	981,700
Alleghany Power Services	355,500	219,100	574,600
Public Service Co. Indiana	284,800	143,400	428,200
Union Electric Co.	227,900	136,300	364,200
Pennsylvania Power & Light Co.	172,800	153,400	326,200
General Public Utilities Corp.	85,900	227,900	313,800
Ohio Edison Co.	161,900	112,800	274,700
Texas Utilities Generating Co.	0	270,700	270,700

Source: EPA National Allowance Data Base, AER*X

These are the top 10 allowance recipients as proposed by the Environmental Protection Agency tallied by AER*X. Bonus allowances are excluded because bonuses have not been decided.

Because the law allotted more allowances than would fit under the emission cap, the EPA also reduced by 9 percent the total number of available allowances, said EPA's Brian McLean, director of the Acid Rain Division.

Emissions of SO_2 will be cut nearly in half by 2000 from 1980 levels and capped at just under 9-million tons.

"Today's proposal, when final, will give the nation's utilities a tough new set of acid-rain requirements, as well as providing more certainty for decision-making on emission trading and long-range compliance planning," said EPA Administrator William Reilly.

Allowances—a flexible emissions-control method that lowers cost of compliance—allows the owner to emit one ton of SO_2 during or after a given year. Even with allowances however, emitters must abide by EPA health-based standards. Sulfur-dioxide, just one substance controlled in CAAA, contributes to acid rain.

Final permit rule released

In related news, the EPA announced the final air permits rule June 25. Those provisions shift enforcement of the Clean Air Act Amendments to states' permitting programs. The rule requires all major sources of pollution—including those related to acid rain, air toxics and smog—to obtain a state operating permit. The definition of "major source" depends on the region. States must form and submit plans for permitting to the EPA for approval by November 1993. Estimated permit fees will bring more than $330 million to states.

The EPA completed the proposed allowance rule mid-June, but it didn't appear in the federal register until July 7. After a 60-day comment period, and a July 15 EPA public hearing, the agency hopes to finalize the assignment of SO_2 allowances by year end.

Decision helps compliance planning

The allowance proposal followed the acid-rain rule, proposed in December 1991. Phase 1 affects 110 plants. Phase 2 sets more stringent requirements for those plants and more than 800 other plants. Utility Phase 1 compliance plans are due Feb. 15, 1993.

See pp.9-13 for more clean-air coverage in EL&P's special report on The Elements: Air

Nine-million allowances are worth $2.7 billion a year at a price of $300, if they are all traded once a year at that price. For the Southern Company, the utility receiving the most allowances, the value of the allowance proposal exceeds $215 million a year in Phase 2, assuming one trade at $300 per allowance.

Allowance prices will vary depending on factors such as state regulatory deci-

Continued on page 7

Ohio Edison buys SO_2 allowances in first transaction with non-utility

AKRON, OH—Ohio Edison agreed to purchase 5000 sulfur-dioxide allowances annually from Alcoa Generating Corp. for $250-350 during five years starting in 1995.

The deal

Part of the deal was not to disclose an exact price, an Ohio Edison (OE) spokesperson said. If the agreed-upon price is $300 per allowance, the transaction would total $7.5 million.

It was the first SO_2 announced transaction between an electric utility and a non-utility company and only the third publicly announced altogether. The first transactions were Wisconsin Power and Light Co.'s allowance sales to Tennessee Valley Authority and to Duquesne Light Co. (*EL&P*, 6/92, p.1)

Alcoa will obtain the allowances by using low-sulfur coal to cut SO_2 emissions at its Warrick Power Plant.

Small investment, comparatively

OE's investment in the allowances is small compared to its other pollution-control efforts. The company reports spending more than $2 billion on environmental protection since 1975, or 15 cents per dollar that Ohio Edison retail customers pay in rates.

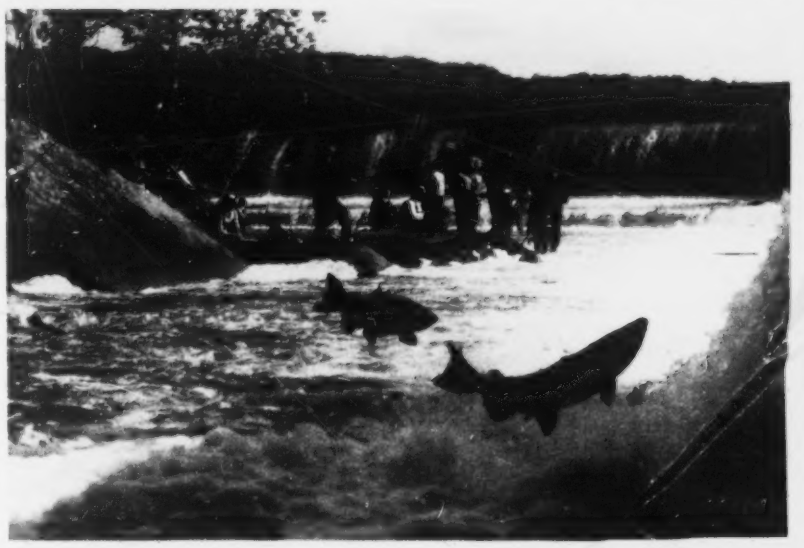
That amount includes $250 million for scrubbers and environmental systems for OE's half ownership interest in the 2700-MW, coal-fired Mansfield plant. OE has participated in 10 clean coal research projects, more than any other utility, the company said.

"Even so, we, too, must achieve further reductions," said Robert J. McWhorter, Ohio Edison senior vice president, "and we have been taking cost-effective steps to do so."

Coal contracts include allowances

Recent coal sales agreements enable Ohio Edison "to specify the sulfur content of coal we receive from several suppliers, who can either meet our specific requirements for lower-sulfur fuels or provide an equivalent amount of emission allowances," said McWhorter.

Ohio Edison expects to complete its compliance plan for the Clean Air Act Amendments of 1990 later this year.



Fishing gets safer near hydro plant

Niagara Mohawk Power Corp. worked with communities near the 8.8-MW Varick hydro plant to enhance the area, including an alarm system to warn of rising water. The Oswego River site attracts thousands of fishing enthusiasts, especially during autumn salmon runs. See the full story this issue.

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ComEd, LCRA, NYPA, AEP lead among wholesale suppliers

BOULDER, CO—The five utilities best positioned to sell wholesale electricity in the U.S. are Commonwealth Edison Co., Lower Colorado River Authority, New York Power Authority, American Electric Power Co., and The Southern Company, according to a new Research Data International study.

The wholesale electricity benefits the buyers as well as the sellers. During the past 10 years, bulk power purchase expenses lowered the average U.S. electric utility's generation costs by almost 10 percent, the study said.

"Wholesale power sales account for more than 20 percent of the $178 billion in total annual revenues of the electric utility industry," said RDI. In volume, wholesale purchases, interchange or wheeling amounted to 63 percent of all power generated in 1990, up from 55 percent in 1986.

Best "targets" for bulk power sales

Utilities best positioned for maximum benefit from purchasing power are Niagara Mohawk Power Co., Gulf States Utilities, San Diego Gas & Electric, Consumers Power, and Old Dominion Electric Cooperative, "because of their limited capacity and high production costs," explained Kent Knutson, RDI vice president.

The most competitive bulk power buyers and sellers are two key areas studied in "Bulk Power Markets in the U.S." The 500-page report includes more than 400 utilities, investor-owned, publicly owned, and cooperatively owned. Also discussed are industry developments influencing the bulk power market.

While Commonwealth Edison was ranked as the top competitor for market share, it was by no means the largest seller at 6,791 GWh in 1990, the most recent year for which data was available. TVA was the top seller at 95,254 GWh; AEP was second at 44,181 GWh.

Criteria for the bulk power rankings include: generation costs, capacity and load factors, present power sales, bulk power sales opportunities and competitors, transmission capabilities and costs, fuel contracts, and acid-rain compliance costs.

According to the RDI study, $32.2 million is the average sulfur-dioxide compliance cost for the 30 hardest hit utilities in Phase 1 of the Clean Air Act Amendments.

For Phase 2 SO_2 compliance cost, the same 30 utilities average $95.3 million.

The highest Phase 1 SO_2 compliance cost is AEP's Ohio Power at $95 million. Tennessee Valley Authority reported the highest Phase 2 compliance cost at $261 million, closely followed by Southern Co.'s Georgia Power at $250 million.

Competitive suppliers, regionally

According to RDI's criteria, the top competitors for market share of bulk sales are, by region:

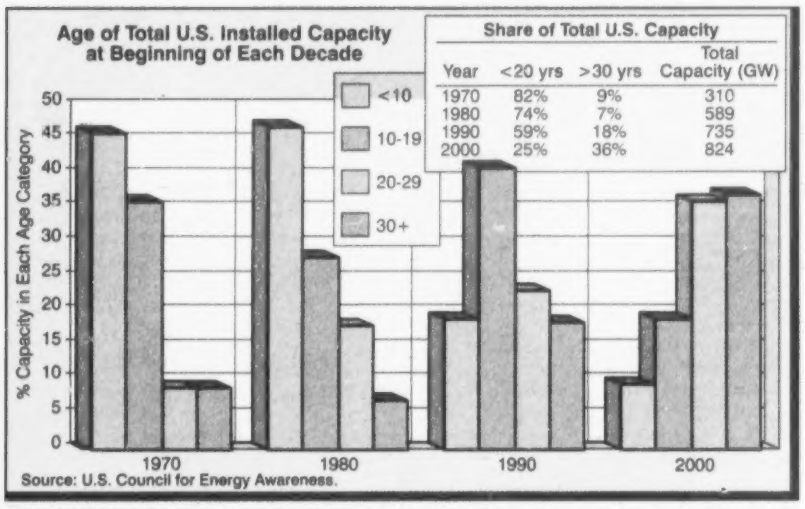
- Northeast Region, MAAC: Pennsylvania Power & Light, Public Service Electric & Gas, Philadelphia Electric.
- Northeast Region, NPCC: New York Power Authority, Public Service of New Hampshire, New York State Electric & Gas.
- Southeast Region, SERC: The Southern Co., Duke Power, Tennessee Valley Authority.
- East North Central, ECAR: American Electric Power, Allegheny Power System, PSI Energy.
- North Central, MAIN: Commonwealth Edison, Union Electric, Illinois Power.
- North Central, MAPP: Iowa-Illinois Gas & Electric, Iowa Public Service, Minnkota Power Co.
- South Central, ERCOT: Lower Colorado River Authority, City of Austin, TX, Texas Utilities.
- South Central Region, SPP: Southwestern Power Administration, Kansas Gas & Electric, Grand River Dam Authority.
- Western Region, WSCC: Bonneville Power Administration, Western Area Power Administration, Arizona Public Service.

The top recipients

The top recipients, or targets, for bulk power sellers, are, by region:

- Northeast Region, MAAC: Baltimore Gas & Electric, Jersey Central Power & Light, and Metropolitan Edison (both General Public Utilities).
- Northeast Region, NPCC: Niagara Mohawk Power, Northeast Utilities, Consolidated Edison.
- Southeast Region, SERC: Old Dominion Electric Co-op, Virginia Electric Power, Florida Power & Light.
- East North Central, ECAR: Consumers Power, American Municipal Power of Ohio, Ohio Valley Electric Corp.
- North Central, MAIN: Wisconsin Public Service, Wisconsin Electric Power, Soyland Power Co-op.
- North Central, MAPP: East River Electric Power Co-op, Minnesota Power & Light, Lincoln Electric System.
- South Central, ERCOT: Tex-La Electric Co-op, Houston Lighting & Power, South Texas Electric Co-op.
- South Central Region, SPP: Gulf States Utilities, Sam Rayburn G&T, Northeast Texas Electric Co-op.
- Western Region, WSCC: San Diego Gas & Electric, City of Anaheim, CA, Southern California Edison.

DSM and aging capacity will augment baseload need: USCEA



WASHINGTON—While demand-side management is usually seen as a way to delay new generation, the U.S. Council for Energy Awareness says intense DSM interest signals a growing need for baseload generating units.

This finding was part of recent USCEA study on aging power plants by Mills, McCarthy & Associates.

USCEA, a promoter of nuclear power, said "widespread implementation of utility demand-side management programs...shifts demand away from expensive peak periods toward greater use of economical baseload generation."

USCEA continued that "Such shifts save consumers money and reduce the urgency for building new capacity. This tends to shift the net increase in demand from economic growth away from peaking toward baseload generation."

This trend, along with continuing electrification of U.S. energy needs and aging generating plants, will require the U.S. to "refurbish, re-license, rebuild or simply order new baseload generation," according to USCEA.

During the decade 1990 to 2000, the share of all U.S. generating capacity over 30 years old will double (see figure). By 2000, 36 percent, or nearly 300,000 MW of capacity will exceed 30 years.

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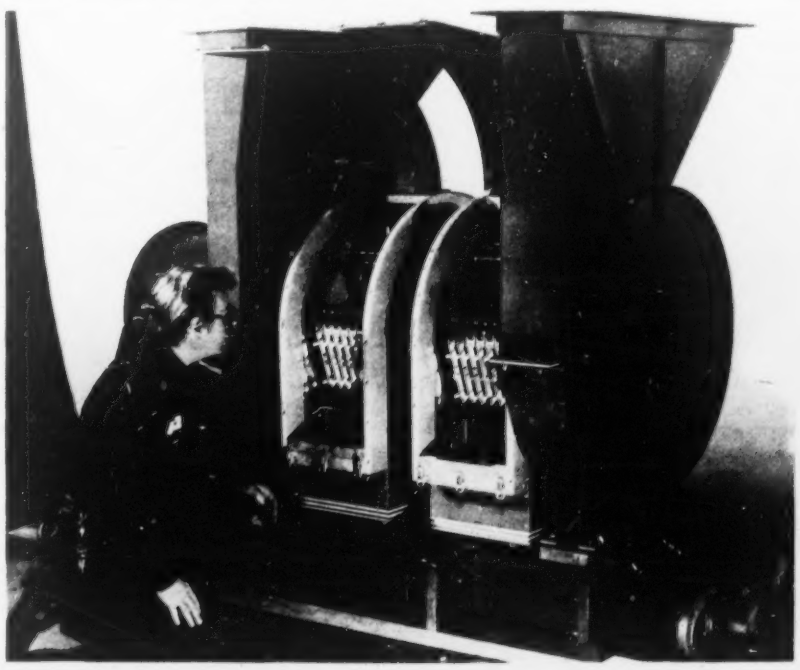


Generator retrofit features static exciter

MILWAUKEE—Siemens Power Corp. announced it has completed an unusual retrofit to the generator of San Diego Gas & Electric's 300-MW, 20-yr-old Encina Unit 4. A static excitation system replaced the generator's rotating, brushless exciter. The stationary exciter is expected to be more reliable and controllable, says Siemens. "The problem with these old, existing units is not exclusive to San Diego Gas & Electric," said Richard Carlson, president of Siemens' A-C Equipment Services Group, which did the work.

Entergy hopes to acquire GSU in 1 yr

NEW ORLEANS—Within a year, Entergy Corp. hopes to make Gulf States Utilities its fifth operating utility.

Entergy and GSU announced the $2.3-billion acquisition plan on June 8 (*EL&P*, 7/92, p.1). The $20-per-GSU-share offer was 38 percent higher than GSU's June 5 closing price. The companies anticipate that 10-year fuel-cost savings of $646 million can lower GSU rates.

Entergy's Cyril Guerrera said preliminary regulatory filings were made in Texas and Louisiana state on July 1.

Guerrera said Entergy hopes that it will be able to complete the merger in 12 to 18 months."But we sure would like to keep it on the shorter time frame."

A transmission tariff advantage?

Entergy has an advantage over other recent extended merger proceedings, Guerrera suggested, because of its open market-based transmission tariff filed with the Federal Energy Regulatory Commission. FERC has conditioned approval for several other mergers on transmission access issues.

If the merger is successful, Entergy will gain direct access to Texas, and greater opportunities for wheeling and bulk power sales.

GSU has had financial challenges related to its largest asset, the River Bend nuclear plant. Entergy, which operates four nuclear units, has one of similar design.

About the utilities

Entergy, formerly Middle South Utilities, serves more than 1.7-million customers through Arkansas Power & Light, Louisiana Power & Light, Mississippi Power & Light, and New Orleans Public Service Co. Entergy, with 12,500 employees, had 1991 sales of more than $4 billion.

GSU serves 579,000 customers in South Louisiana and Southeast Texas, has 4,800 employees, and had 1991 sales of $1.7 billion.

GSU would operate as a subsidiary and remain based in Beaumont, TX, the companies said.

Utilities seek transmission forum

WASHINGTON—The "Inter-regional Transmission Coordination Forum" seeks federal approval to resolve transmission and bulk power technical issues in the Northeast.

The ITCF now consists of 20 investor-owned utilities, Tennessee Valley Authority, New England Power Pool, and two independent power producers.

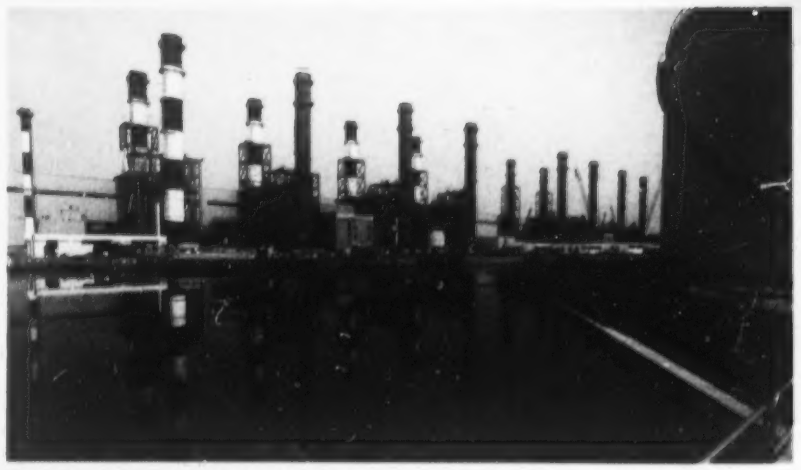
The group asked the Federal Energy Regulatory Commission to approve its charter, bylaws, and dispute-resolution guidelines, since ITCF activities will affect FERC-governed rates and services.

ITCF membership is voluntary and open to all regional providers. It follows reliability criteria and guidelines set by the North American Reliability Council and NERC's regional councils. ITCF will not take positions on legislation, said a spokesman for General Public Utilities, an ITCF member.

Mission statement: cooperation

According to Robert Arnold, ITCF chairperson, "The mission of the ITCF is to promote cooperation and coordination between the owners, operators, and users of regional interconnected transmission systems to assure system integrity and maximum reasonable use of facilities for economic benefit."

Further, ITCF intends to "encourage investment in additional facilities to maintain reliability or enhance transfer capability or both," said Arnold, who is executive vice president for power supply for GPU Service Corp.



Korea Electric Power's Seoinchon plant has combined-cycle gas turbines used at Chesterfield 7 and 8.

Combined-cycle plant commercial by yr-end

By December, Korea Electric Power Co.'s Seoinchon plant is expected to operate at 2000 MW. Eight combined-cycle, gas turbine generators, fueled by liquified natural gas, are expected to be the world's most thermally efficient large power plant, according to General Electric.

The plant uses GE Stag 107F combined-cycle units like those used at Virginia Electric Power's Chesterfield 7 and 8. Chesterfield 7 is the most thermally efficient large U.S. power plant at 51 percent, GE said. Chesterfield 8, rated at 218 MW, began commercial operation in June. These units, in Korea and the U.S., are the first heavy-duty gas turbines to fire at 2300°F in daily commercial use, GE said at the 1992 ASME Turbo Expo, in Cologne, Germany.

$30M offered for ultra-efficient refrigerator

SACRAMENTO, CA—A group of utilities intend to encourage manufacture of super-efficient refrigerators by offering more than $30 million to the winner of a competitive bid.

"Refrigerators and freezers consume approximately 20 percent of the electricity used in American homes, and much of that is wasted," said Richard Harkness, executive director of the non-profit group, Super Efficient Refrigerator Program (SERP).

SERP expects the winning refrigerator to use 25-50 percent less electricity than those now sold and not contain ozone-harming chlorofluorocarbons. The unit should be designed, tested and selected in 1993 and on the market as early as 1994 at a comparable price to other refrigerators, SERP said.

The reward operates as a demand-side management program because the winning manufacturer gets the prize when refrigerators are delivered to participating utilities' service territories. Utilities contribute the award based on number of residential customers.

About 25 utilities are current or prospective members; more are welcomed, Harkness said.

U.S., Canada electric rates stay low among industrial nations

PARK RIDGE, NJ—Despite increases in U.S. commercial/industrial electricity rates during the last two years, U.S. rates remain "among the least expensive compared to rates in industrialized countries worldwide," according to a survey by National Utility Service.

Lowest rates

Canada's electricity rates were the lowest of all nations surveyed (see table), with an average increase of 0.9 percent, 1991-92.

The survey looked at rates for 1000 kW customers at 450,000 kWh per month, said NUS, an energy and telecommunications rate consulting firm. These customers would be large commercial, or industrial. Rates within utilities usually vary widely depending on customer size and other factors.

Reasons for increases

The 24 U.S. utilities surveyed increased rates by an average of 0.5 percent, 1991-92. Rates of 13 increased, 10 fell, and one remained unchanged, NUS noted. In a 1990-91 survey, NUS reported a 3.3-percent gain.

Most price movements from 1991 to '92 were from fuel costs, although "over the next three years, electricity rates, on average, will increase due to compliance with the Clean Air Act," commented Ed Tirello, a managing director at Smith Barney.

Largest increase

Among U.S. utilities in the survey, Houston Lighting and Power had the largest increase, about 12 percent, related to costs of a new generating plant.

The United Kingdom's 9-percent increase primarily was from higher wholesale rates, NUS said. UK rates may continue to increase, related to industry restructuring, NUS suggested, "if the government doesn't impose pricing controls on utilities."

Electricity Costs by Country, 1991-92 With Some U.S., Canada Utilities
(Customer Size 1000 kW; 450,000 kWh per Month)‡

Country or Utility	Cents per kilowatthour April '92	April '91
Manitoba Hydro	3.14	3.05
Saskatchewan Power	3.46	4.93
British Columbia Hydro	3.50	3.38
Transalta Utilities Corp.	3.84	3.29
Public Service Co. of Oklahoma	4.05	4.15
Hydro Quebec	4.22	4.00
New Brunswick Electric	4.38	4.38
American Electric Power (Ohio subsidiaries)	4.67	4.67
CANADA*	**4.68**	**4.64**
Newfoundland Light & Power	4.72	4.72
Texas Utilities	4.86	5.23
Dominion Resources	4.97	4.90
AUSTRALIA*	**5.03**	**4.85**
Duke Power	5.34	4.99
Nova Scotia Power	5.38	5.15
Louisiana P & L (Entergy)	5.50	5.53
Florida Power & Light	5.64	6.05
Consumers Power	5.65	5.87
SWEDEN*	**5.68**	**5.56**
NORWAY	**5.71**	**5.95**
Ontario Hydro	5.78	5.15
FINLAND	**5.84**	**5.55**
Union Electric	5.91	5.91

Country or Utility	Cents per kilowatthour April '92	April '91
Georgia Power (Southern Co.)	6.00	6.01
NETHERLANDS*	**6.09**	**6.23**
Houston Lighting & Power	6.24	5.55
Carolina Power & Light	6.29	6.33
Pennsylvania Power & Light	6.67	6.31
FRANCE	**6.74**	**6.65**
USA*	**7.02**	**7.00**
Niagara Mohawk Power	7.31	7.81
Commonwealth Edison	7.33	7.89
UNITED KINGDOM	**7.38**	**6.79**
IRELAND	**7.46**	**7.46**
BELGIUM	**7.81**	**7.79**
Detriot Edision	7.83	7.56
Ohio Edison	7.86	7.80
Public Service Gas & Electric	8.08	8.03
Maritime Electric Co.	8.38	8.38
Pacific Gas & Electric	8.48	8.27
Jersey Central Power & Light	8.65	8.56
Philadelphia Electric	9.26	8.82
Consolidated Edison	9.96	10.69
Southern California Edison	10.09	9.79
GERMANY*	**10.22**	**10.27**
ITALY	**10.43**	**9.86**
Long Island Lighting Co.	11.90	11.17

‡ Typically an industrial or large commercial customer. Rates often vary widely within a utility.
* These countries' rates are based on a number of major utilities and are not necessarily the national average.
Taxes were excluded for utilities in states and nations that exempt purchases of this size. Monetary exchange was based on the *London Financial Times*, April 1, 1992, listing, 1£ = $1.724

Source: National Utility Service, Park Ridge, NJ.

COMMENTARY

Media rips SO_2 emission trade

Much of the media passed judgment in coverage of the first SO_2 emissions trade (*EL&P*, 6/92, p.1). This may have resulted largely from a May 12 story in *The New York Times*. Its front-page headline said: "UTILITY IS SELLING RIGHT TO POLLUTE." The headline where the story jumped was similar.

Under provisions of the Clean Air Act Amendments of 1990, Wisconsin Power & Light sold 10,000 sulfur-dioxide allowances to Tennessee Valley Authority and from 10,000 to 25,000 more to Duquesne Light Co.

The New York Times story's lead explained the first deed: "Two utilities hundreds of miles apart will announce today that they have signed a contract that calls for one to buy from the other the right to emit a chemical that causes acid rain, freeing the dirtier one from having to clean up its own plants as stringently."

Other media picked up this negative tone. To its credit, *The New York Times* story eventually pointed out some benefits of emissions trading, but not before slinging more mud at the electric utility industry and the Environmental Protection Agency.

As a result of this and similar general media coverage, the view the public received was of several evil utilities selling or buying the right to pollute. This abusive language comes from editors looking to catch the public's eye, rather than responsible journalists explaining what may be the farthest-reaching, lowest-cost, most-flexible and effective way ever to reduce air pollution.

Buried in the last few paragraphs, the May 12 *The New York Times* story finally contradicts its own headlines by saying: "Mr. Malec [of TVA] and others involved in the deal said it should not be construed as the sale of the right to pollute." Judging by other media coverage on the event, this small truth was too little, too late.

An efficient trading market will allow the industry to make the most cost-effective sulfur-dioxide reductions where they make the most sense. It helps the environment: utilities will use it to comply with the most comprehensive, and expensive air-quality law ever, at lower costs to ratepayers, without more expensive command-and-control measures. No matter what the compliance method, all utilities still must comply! Sulfur-dioxide emissions nationwide will be cut in half while allowance trading and market forces minimize costs.

Trading provides flexibility along with clean air. When air-monitoring equipment fails, or a plant suffers an unexpected outage, a plant owner can use purchased credits to comply with the law and preserve air quality, rather than just over-emit and pay a fine.

Instead of "UTILITY IS SELLING RIGHT TO POLLUTE," a more accurate—and just as catchy—headline would have been: "UTILITY MAKES, SELLS CLEAN AIR." Please explain the distinction to people you know. It's not electric utilities against environmentalists. Look at what the industry is doing...we *are* the environmentalists.

Mark T. Hoske, News Editor

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LETTERS

Better communication is key

I enjoyed reading your commentary, "Gas and electricity: an uneasy alliance," in the May 1992 issue of *Electric Light & Power*. I strongly agree on the need to identify and address the many hurdles which are preventing the electric utility and natural gas industries from fully capitalizing on the benefits of their new "alliance".

The major barrier between our two industries is a very simple one—lack of communication. To rectify this, Tenneco Gas has been working closely with the electric utility industry since the mid-1980s, learning how to meet its needs and, in turn, providing information on the natural gas business. We have first-hand experience with the issues you described, particularly the role natural gas can play in electric utility compliance with the Clean Air Act Amendments of 1990.

Tenneco Gas, too, has found that a major obstacle to a stronger inter-industry alliance is electric utilities' belief that "natural gas (does not) offer sufficient security in future availability and price predictability to be a reliable base-load power plant fuel." Better communication and understanding is the key to overcoming this misconception.

Tenneco Gas has made a stong commitment to serve customers along its 20,000-mile pipeline system. In the last three years alone, the company has spent almost $400 million expanding capacity in the Northeast. Seventy-two percent of this capacity growth is to provide firm transportation of natural gas to electric generation facilities with 1,800 megawatts of new capacity for the region. Additionally, Tenneco Gas is a 50-percent participant in the $1-billion, 700MMcfd Kern River project to California where cogeneration/electric generation load is approximately two thirds of the throughput. We will continue to provide the infrastructure to meet electric utilities'—and other customers'—needs.

To address this issue from a supply perspective, Tenneco Gas developed an approach we call the "Producer/Pipeline Clean Air Team." Collaborating with natural gas producers, we can prove to electric utilities that long-term, price-"certain" natural gas contracts are widely available. In fact, we have an ongoing relationship with more than 20 major producers who meet the needs of the electric utility industry.

Tenneco Gas has been working to promote a dialogue between the industries and to explain the advantages of natural gas as part of a clean air compliance portfolio. We now are beginning to see the results of our efforts.

Late last month, American Electric Power announced that it was fuel switching four of its coal-fired electric generating units to natural gas with coal backup as part of its Phase I Acid Rain compliance plan. And to further demonstrate the benefits of cofiring natural gas and coal, Tenneco Gas is funding the retrofit of a coal-fired electric generating plant in Indiana where the use of natural gas will increase the plant's ability to burn local coal while also providing operational benefits.

Such results underline our belief that natural gas can provide an attractive option for electric utilities, not only for new generation capacity, but for meeting a key challenge of the future—stricter air quality standards at existing facilities.

Again, I enjoyed your commentary and would welcome the opportunity to further discuss Tenneco Gas' interaction with the electric utility industry.

H.C. "Chappy" Lucas
Manager, Clean Air/Select Use
Market Development
Tenneco Gas

NEWS BRIEFS

JILL MINNER, Assistant Editor

Battelle executive touts future technologies

In order to face increasing competition in the future electric utility market, each utility needs to formulate a technology strategy and make it an integral part of the company's corporate plan, according to Battelle President and CEO Douglas E. Olesen. Speaking at the Edison Electric Institute Convention/Expo '92 in Columbus, OH, Olesen listed ten "high-impact" future technologies: high-temperature superconductivity, neural networks, fuel cells, cold fusion, magneto-hydrodynamics, photovoltaics, the gas-engine heat pump, technology to mitigate electro-magnetic fields, electric vehicles, and LPPP (laser-powered potato peeler). Olesen noted that, "Electric vehicles represent—far and away—the one near-term, end-use technology breakthrough that would most fundamentally shift the growth curve of the electric industry."

BICC to buy Reynolds' cable operations

BICC Cables Corp. has signed a letter of intent to purchase Reynolds Metals Co.'s North American electrical cable operations as of September 1, 1992. Included in the sale will be Reynolds' four electrical division cable plants located in Arkansas, Texas, Washington and Quebec, and its cable technology center in Marshall, TX. As part of the agreement, Reynolds will enter into a long-term supply contract with BICC to provide aluminum redraw rod to the cable plants. BICC said it intends to integrate Reynolds' U.S. business with its Cablec Utility Cable Co., and the Quebec operation with the Utilities Division of Phillips Cables Limited.

Ebasco contracts to continue SMES effort

Ebasco Services Inc. signed a $4.7-million contract with the Defense Nuclear Agency of the U.S. Department of Defense to continue its work on the development of a Superconducting Magnetic Energy Storage (SMES) system. Under the agreement, Ebasco will continue to provide cost and technical data to the Defense Nuclear Agency. The data allows potential developers and users of the SMES system to select cost-effective, low-risk technologies for specific applications, according to Ebasco.